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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/627,184	07/25/2003	Demetri Psaltis	G&C 176.4-US-UI	3861
22462	7590	03/01/2006	EXAMINER	
GATES & COOPER LLP HOWARD HUGHES CENTER 6701 CENTER DRIVE WEST, SUITE 1050 LOS ANGELES, CA 90045			EVANS, FANNIE L	
			ART UNIT	PAPER NUMBER
			2877	

DATE MAILED: 03/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

5

<b>Office Action Summary</b>	Application No. 10/627,184	Applicant(s) PSALTIS ET AL.	
	Examiner F. L. Evans	Art Unit 2877	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 25 July 2003.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>0703</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *The Information Disclosure Statement*

The prior art cited in the information disclosure statement filed on July 25, 2003 has considered.

### *Claim Objections*

Claim 1 is objected to in that it fails to set forth a section (c). In line 6 of claim 1, "(d)" should be changed to --(c)-- and in line 11 of claim 1 "(e)" should be changed to --(d)--.

In line 8 of claim 1, "(having spectral information)" should be changed to --having spectral information--.

Claim 5 is objected to in that it does not end with a period. Each claims must begin with a capital letter and end with a period. Periods may not be used elsewhere in the claims except for abbreviations. Correction is required.

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the second paragraph of 35 U.S.C. § 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 7 is rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The lack of an antecedent for "the objective optics" in line 1 of claim 7 renders claim 7 and any claim dependent therefrom indefinite.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 4-6, 8, 10-12, 14-16, 18, 20-22, 24-26, 28 and 30 are rejected under 35 U.S.C. § 102(b) as being clearly anticipated by Liu et al (Optics Letters).

Liu et al disclose a holographic imaging spectrometer/imaging apparatus comprising: (a) a four-dimensional (4D) probing source object (Fig. 1, third paragraph page 854); (b) a holographic element comprising one or more recorded holograms configured to receive and diffract an optical field emitted from the 4D probing source object into one or more diffracted plane beams having spectral information (Fig. 1, third paragraph on page 854); (c) collector optics (Fig. 1) configured to (i) focus the one or more diffracted plane beams having spectral information to a two-dimensional (2D) slice (having spectral information) of the 4D probing source object; and (ii) project the focused 2D slice having spectral information onto a detector (Fig. 1, fourth paragraph page 854); and (e) the detector (Fig. 1, fourth paragraph page 854) configured to receive the focused and projected 2D slice. The recorded hologram was recorded by interfering a monochromatic point source signal beam and a plane reference beam fourth paragraph on page 854). The one or more recorded holograms are multiplexed within the holographic element; the one or more recorded holograms are arranged to extract a corresponding slice of the 4D probing source object; and the one or more recorded holograms are arranged to diffract light from the corresponding slice of the 4D probing source object to a non-overlapping section of the detector (first full paragraph on page 856). Objective optics are configured to process the optical field emitted from the 4D probing source object (Fig. 1). The diffraction by the one or more holograms is based on one or more Bragg degeneracy properties (first paragraph on page 855). The collector optics comprises an imaging lens (Fig. 1). Applicant's attention is directed to Liu et al in its entirety.

The method of claims 11, 12, 14-16, 18 and 20 is performed by the apparatus disclosed by Liu et al.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness

Art Unit: 2877

rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. § 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR § 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. § 103(c) and potential 35 U.S.C. § 102(e), (f) or (g) prior art under 35 U.S.C. § 103(a).

Claims 3, 13 and 23 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Liu et al (Optics Letters) in view of Case (4,386,414).

Liu et al disclose essentially every claimed limitation except the limitation of at least one of the holograms being recorded by a computer generated signal.

In the last paragraph in column 4, Case discloses the advantages of computer generated holograms over optically generated holograms.

At the time the invention was made, it would have been obvious to one with ordinary skill in the art to computer generate the holograms of the holographic element of Liu et al because of the advantage obtained therefrom. The advantage is set forth in the last paragraph in column 4 of Case.

Claims 9, 17, 19, 27 and 29 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Liu et al (Optics Letters) in view of George et al (US 4, 752,130).

Liu et al disclose essentially every claimed limitation except the limitations of the collector and objective optics being part of the holograph element.

Art Unit: 2877

In lines 1-25 of column 8, George et al disclose a spectrometer in which the collector and objective optics (collimators) are part of a volume holographic element.

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to incorporate the collector and objective optics into the holographic element of Liu et al because such incorporation would have resulted in a simpler system with the ability to be implemented in a compact package. Applicant's attention is directed to George et al, lines 23-25 of column 8.

*Additional Prior Art*


Liu et al (IEEE LEOS and IEEE Proceedings) disclose volume holographic spatial and spectral imaging systems.

*Fax/Telephone Numbers*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to the examiner whose telephone number is (571) 272-2414.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley, Jr. can be reached on (571) 272-2800 ext 77. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
**F. L. EVANS**  
**PRIMARY EXAMINER**  
**ART UNIT 2877**

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February 24, 2006